

GALAXIES

COURSE INFORMATION

Time and Location:

Tuesday & Thursday 0930-1100, HENN 304

Instructor:

Paul Hickson
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Office hours: Tuesday & Thursday 1100-1200

Evaluation:

term paper	40%
presentation	20%
homework	40%

Website:

www.phas.ubc.ca/~hickson/astr505

Suggested references:

1. Binney and Merrifield, *Galactic Astronomy*, Princeton 1998
2. Binney and Tremaine, *Galactic Dynamics*, Princeton 1987
3. Hazard & Mitton, *Active Galactic Nuclei*, Cambridge, 1979
4. Mihalas and Binney, *Galactic Astronomy*, Freeman 1981
5. Miller, *Astrophysics of Active Galaxies and Quasi-Stellar Objects*, University Science Books, 1985
6. Osterbrock, *Astrophysics of Gaseous Nebulae and Active Galactic Nuclei*, University Science Books 1989
7. Sandage, Sandage & Kristian, *Galaxies and the Universe*, Stars & Stellar Systems Vol IX, U. Chicago Press, 1975
8. Spitzer, *Diffuse Matter in Space*, Wiley 1968
9. Tucker, *Radiation Processes in Astrophysics*, MIT Press 1975
10. Peebles, *Principles of Physical Cosmology*, Cambridge 1993
11. Peacock, *Cosmological Physics*, Cambridge 1999

COURSE OUTLINE

Introduction and Review

- Overview
- Surveys and catalogues
- Astronomical background
- Types and sources of radiation

Structure of Normal Galaxies

- Morphology and classification
- Photometric properties
- Kinematics
- Stellar populations

Stellar and Galactic Dynamics

- Theoretical foundations
- Spheroidal systems
- Disks

The Interstellar Medium

- Structure and composition
- Star formation

Active Galaxies

- Morphology and classification
- Radio galaxies
- Active galactic nuclei
- Starburst and infrared-luminous galaxies

Clusters and Groups

- Identification and definition
- Physical properties
- Dynamical evolution

Galaxy Formation

- Hot Big Bang cosmology
- Fluctuation power spectrum
- First objects
- Reionization
- Star formation history